

A Review of Australian Species of *Laphria* (Asilidae, Diptera), with Descriptions of Three New Species from Lord Howe Island

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KEY TO THE AUSTRALIAN SPECIES OF *Laphria*

1. Legs quite black, but can be covered partly by yellow hairs; if not very intense, always uniformly coloured.....2

Legs always partly yellow or orange...12

2. Wings marked with black and bright yellow or orange (Fig. 1). New South Wales**L. ornatipennis** Macquart, ♂, ♀

Wings hyaline or blackish, never with yellow markings.....3

3. Hind margin of scutellum at most with four bristles, the central pair weaker and shorter than the lateral pair (Fig. 2a). 1 supraalar and 1 notopleural bristle. One black bristle at sides of tergites 1-5. Western Australia.....**L. clavata** White, ♂, ♀

Hind margin of scutellum with more than 4 bristles (Fig. 2b); if there are only 4 bristles, the middle pair is not shorter than the lateral one. Number of supraalar, notopleural and lateral bristles on abdomen not as above.....4²

4. Spots at sides of abdomen and hairs on the spots distinctly yellow; the lateral bristles are also yellow. Hairs and bristles very numerous and long. Queensland...**L. reginae**, sp. nov., ♂, ♀

Spots at sides of abdomen pure white...5

5. Hairs on underside of head and on face reddish-yellow. Bristles at sides of abdomen numerous: on 1st tergite 4-5, on 2nd 3, on following 2. Lord Howe Island**L. zentae**, sp. nov., ♂, ♀

Hairs on underside of head and on face whitish. Bristles on sides of abdomen not so numerous; usually only one on each tergite.....6

6. Wings quite black. Sides of mesonotum not silvery-marked. Disc of scutellum shining. Postscutellum with yellowish, not very noticeable dust.....7

Wings with black colour only along the veins. Disc of scutellum dusted. Postscutellum with strong silvery dust, similar dust on the sides of mesonotum...8

7. A very sharply marked cross furrow below the base of antennae (Fig. 4a). Proboscis longer than the height of head. Hairs on underside of hind tibiae whitish. Western Australia...**L. leei**, sp. nov., ♀

Only a slightly marked cross furrow below the base of antennae or furrow absent

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² *L. niveifacies* from Tasmania belongs to this group, but the description by Macquart is too short. Only after a study of all Tasmanian species of *Laphria* will it be possible to determine exactly this species of Macquart.

- (Fig. 4*b*). Proboscis shorter than the height of head. Hairs on underside of hind tibiae black. Queensland, North Australia.... *L. maura*, sp. nov., ♂, ♀
8. Abdomen partly yellow. Western Australia..... *L. lukinsi*, sp. nov., ♂, ♀
- Abdomen wholly black..... 9
9. Prescutellar area (its declining part) covered with short bristles. Only one bristle on each segment of abdomen, at sides. New South Wales, Western Australia...
..... *L. dayi*, sp. nov., ♂, ♀
- Prescutellar area (its declining part) is quite bare, or the hairs are quite the same as the others on the mesonotum..... 10
10. Scutellum partly reddish, also the postalar calli. Queensland, Western Australia..... *L. modesta*, sp. nov., ♂, ♀
- Scutellum and postalar calli always black..... 11
11. Wings distinctly yellow at base. New South Wales... *L. campbelli*, sp. nov., ♂
- Wings at base not yellow. New South Wales, Victoria.....
..... *L. mauroides*, sp. nov., ♂, ♀
12. Tibiae always partly yellow..... 13
- Tibiae always wholly black..... 20
13. Ground colour of abdomen black, with the usual white or slightly yellowish spots at sides of 2nd–4th tergites.... 14
- Ground colour of abdomen yellow, or with large yellow spots, or with narrow yellow lateral stripe, or at least with the last two tergites yellow 15
14. Length 12 mm. All femora yellow on their basal halves. White tomentose spots on the first four tergites. Thorax and scutellum dull black. Queensland.....
..... *L. fulvipes* Ricardo, ♀
- Length 13.5 mm. or more. Anterior and middle femora with only yellow spots on basal halves. White spots only on 2nd, 3rd and 4th tergites. Mesonotum (if the insect is not greasy) with spots of golden dust on humeral calli and behind them, four golden markings at suture: two subcentral and two lateral; golden prescutellar area and golden disc of scutellum. Lord Howe Island.....
..... *L. pacifica*, sp. nov., ♂, ♀
15. Only the last two tergites are yellow or reddish. Abdomen with white spots at sides. Queensland.....
..... *L. bancrofti* Ricardo, ♀
- The yellow or reddish colour occupies a greater area of the abdomen. Abdomen without white spots at sides..... 16
16. Only sides of tergites reddish, forming a narrow lateral stripe at sides of abdomen..... 17
- More than lateral stripes are reddish or yellow..... 18
17. Tibiae with extremely long, bright yellow hairs. Fore femora nearly wholly black. "Australia".... *L. hirta* Ricardo, ♂, ♀
- Tibiae with extremely long black hairs. Fore femora with very large yellow spots on underside. Lord Howe Island.....
..... *L. howeana*, sp. nov., ♂, ♀
18. Borders of 2nd, 3rd and 4th tergites yellow. Length 11 mm. "Australia".....
..... *L. calopogon* Bigot, ♂
- Greater part of abdomen golden-yellow, the middle part can be camouflaged with black hairs. Length 12–13 mm..... 19
19. Anterior and middle femora black. Queensland. *L. burnsi*, sp. nov., ♂, ♀
- Anterior and middle femora at base yellow (Fig. 6*a*). New South Wales, Queensland..... *L. variana* White, ♂

20. Femora yellow. Abdomen without white lateral spots. Tasmania.....
.....*L. flavifemorata* Macquart, ♀

Femora predominantly black, partly yellow. Abdomen with lateral white spots.....21

21. Legs black, only two-thirds of posterior femora yellow. Western Australia, Tasmania, New South Wales.....
.....*L. telecles* Walker, ♂, ♀

More parts of legs than two-thirds of hind femora are yellow.....22

22. Anterior legs wholly black. Apical part of female abdomen depressed laterally (Fig. 3*a*). New South Wales, Victoria.....
.....*L. comata* White, ♂, ♀

Anterior femora at base at least with a yellow spot (Fig. 6*b*). Apical part of female abdomen rounded, not laterally depressed (Fig. 3*b*). Nearly whole of Australia. *L. ruffifemorata* Macquart, ♂, ♀

Laphria zentae sp. nov., ♂, ♀

Belongs to the group with completely black legs.

Ground colour of body shining black. Head covered with a whitish dust, hairs and semi-bristles of face reddish-yellow; the central part of face (moustache) with black bristles. Some black bristles below base of antennae, on ocellar tubercle and on occiput, especially on the excavation of vertex. Hairs on antennae black. Third antennal joint elongated, elliptical. Proboscis short, only about half as long as the vertical diameter of head.

Sides of thorax, postscutellum and coxae with white dust. Mesonotum with reddish-yellow markings on humeral calli, two transverse spots of the same colour behind them, with a silvery marking at each side of suture, and similar marking near postalar calli. Scutellum with numerous black marginal bristles

and with short yellowish and black hairs on the disc (Fig. 2*b*). In notopleural area (hind part) 3-4 long black bristles, 3-4 similar bristles in supraalar area, and 3-4 more on postalar calli. Prescutellar area nude.

Wings blackish in apical half and along hind margin, basal half nearly hyaline. Vein closing the discal cell (tp) straight. Cross vein r-m at end of basal third of the discal cell. First posterior cell at apex broad, slightly narrowed. Halteres yellowish.

Legs black, long and slender, hind femora only slightly swollen. Underside of anterior tibiae and metatarsi with very short but dense yellow hairs, in the form of brushes; lateral and dorsal sides with very long, black hairs and bristles; anterior femora with yellow and black hairs, the black ones only on upperside, but without strong bristles. Mid-legs very similar to the anterior, but without the yellow brushes and with some strong bristles on apical part of femora. Hind legs similar to the middle ones, metatarsi not swollen, maximally as broad as apex of tibiae and nearly as long as three following segments combined. Claws of all legs slightly yellow at base. Pulvilli yellowish.

Abdomen elongated, longer than in other species, black, shining, laterally with white spots on first to fourth tergites. Hairs on lateral side yellowish, not dense. At sides of first tergite 4 black bristles, on the second 2-3, on third, fourth and fifth 2 bristles. Genitalia rather large, black, shining, with black and whitish hairs.

Female differs only slightly from the male. Long yellowish hairs are paler, whitish, but on head reddish as in male; abdomen slightly broader.

Length of body 19 mm., of wing 15 mm.

1 ♂, 29.xi.1955 (type), 1 ♂, 5.xii.1955, Lord Howe Island, N. S. Wales (S. J. Paramonov and Z. Liepa); 1 ♂, 19.ii.1957, North Bay, Lord Howe Island (Z. Liepa); 1 ♀, 29.xi.1955, 1 ♀, 28.xi.1955, Lord Howe Island (S. J. Paramonov and Z. Liepa).

Type in the Division of Entomology Museum, C.S.I.R.O., Canberra.

This species is not very closely related to the mainland species, but superficially looks very similar to *L. dayi* sp. nov.

Laphria pacifica sp. nov., ♂, ♀

From the group with yellow-marked tibiae.

Face and frons dusted with yellow; face with long, black bristles of moustache and below the antennae, and with central part covered with dense golden scalelike hairs. Underside of head with white hairs. Most of occiput, ocellar tubercle and antennae clothed with black hairs. Third antennal segment extremely elongated, narrow, broadening slightly towards the apex. Proboscis long, about as long as vertical diameter of head.

Mesonotum with golden markings on humeral calli; behind them on the sides of suture, two small subcentral markings; golden markings also on prescutellar area and on the disc of scutellum. Propleurae and mesopleurae also golden but not so distinct as the mesonotum. Sides of thorax whitish and yellow dusted. Two notopleural bristles, 3–4 supralar, 4 postalar. Prescutellar area quite nude. Scutellum with numerous long, black and white, marginal hair-bristles; disc with very short, yellowish ones.

Wings on apical two-thirds black, basal third hyaline. Veins closing the fourth posterior cell not straight but convex. Halteres yellow.

Legs black, but all femora and tibiae with reddish-yellow markings. All femora very swollen, the anterior only slightly yellow at base; the middle with basal third yellow; the hind with basal half yellow. Hairs on yellow parts of legs yellow, on remainder black. Bristles on femora practically absent. Tibiae with extremely long hair-bristles, especially the middle tibiae, and with yellow markings occupying their middle half. Hind tibiae distinctly curved. Pulvilli yellow.

Abdomen black, with slight blue sheen,

and with 3 small white or slightly yellowish spots of dust on sides of second, third and fourth tergites. Hairs on sides yellowish, not very numerous. Genitalia very large, swollen.

Female very similar to the male. The abdomen comparatively broader, and the spots at sides of second to fourth tergites larger and whiter. Hind metatarsus distinctly swollen.

Length of body 14.4 mm., of wing 11 mm.

1 ♂, 18.xii.1955 (type), Lord Howe Island, N. S. Wales (S. J. Paramonov); 1 ♂, 1 ♀, 28.xi.1955, 1 ♀, 30.xi.1955, Lord Howe Island (S. J. Paramonov and Z. Liepa).

Type in the Division of Entomology Museum, C.S.I.R.O., Canberra.

Laphria howeana sp. nov., ♂, ♀

Belongs to the group with yellow-marked tibiae, but without spots of white or yellow dust at sides of abdomen.

Very similar to *L. pacifica* sp. nov., but white spots at sides of abdomen replaced by a narrow reddish longitudinal stripe. This stripe is not visible from above but is clearly visible from the lateral view. Golden markings on mesonotum brighter, postscutellum silvery. The yellow colour on legs is brighter and more extensive: it occupies the basal half of anterior and middle femora and a slightly greater area of hind femora.

Length of body 18 mm., of wing 14 mm.

1 ♂, 29.xi.1955 (type), 7 ♂♂, 25.xi.–29.xi.1955, 11 ♀♀, 23.xi.–29.xi.1955, Lord Howe Island, N. S. Wales (S. J. Paramonov and Z. Liepa); 3 ♀♀, 20.xi.1956, Dawson Range, Lord Howe Island (Z. Liepa).

Type in the Division of Entomology Museum, C.S.I.R.O., Canberra.

Some specimens have nearly hyaline wings, although as a rule the apical two-thirds is dark.

It is quite evident that all three described species are common on the island, but other representatives of Asilidae are very rare. Only one species of Dasypogoninae was collected, but no Asilinae, Stichopogoninae or Lepto-

gastrinae were seen on the island by myself or by my assistant.

All three described species are rather closely related to the mainland species, but none of the mainland species were found on the island. The circumstance that all three species of the same genus are different from the mainland species seems to be a convincing sign of true paleoendemism.

The relationship between species from Lord Howe Island and those from the mainland are easily seen from the above given key to identification of all Australian species known to the author.

***Laphria clavata* White, ♂, ♀**

Laphria clavata White, 1913. Roy. Soc. Tasmania, Proc. 1913: 273.

Laphria clavata Hardy, 1929. Linn. Soc. N. S. Wales, Proc. 54: 357.

Laphria clavata Hardy, 1934. Ann. and Mag. Nat. Hist. (10) 13: 519.

Type in the British Museum, London.

This species is recorded only from Western Australia. On the abdomen the small white lateral spots are present only on the 2nd, 3rd and 4th tergites, but not on the 1st. Claws and pulvilli in female about as long as in male. Wings distinctly smoky in their distal half. A rather common species (Fig. 2a).

***Laphria ornatipennis* Macquart, ♂, ♀**

Laphria ornatipennis Macquart, 1849. Dipt. Exot., Sup. 4: 73.

Laphria ornatipennis Ricardo, 1913. Ann. and Mag. Nat. Hist. (8) 11: 156.

Laphria ornatipennis Hardy, 1929. Linn. Soc. N. S. Wales, Proc. 54: 357.

Laphria ornatipennis Hardy, 1934. Ann. and Mag. Nat. Hist. (10) 13: 520.

Type in the Paris Museum.

The moustache in the male consists of soft, long golden hairs and bristles, in the female of stout black bristles and some yellow hairs. A bright yellow third antennal joint is characteristic of this species alone. Two bright yellow triangles in the fore part of the wing also separate this species at once from all other species (Fig. 1).

Distributed in Eastern states of Australia and not very common.

The author has seen specimens from the following localities: New South Wales: 1 ♂, 31.xii.1923, Broken Bay (Mackerras); 1 ♂, 1.i.1926, National Park (Mackerras); 1 ♂, 12.iii.1953, Colo Vale (R. Mykytowycz); 1 ♀, 12.i.1935, 1 ♀, 25.ii.1935, Killara (M. F. Day); 1 ♀, 17.i.1935, Port Macquarie (M. F. Day); 1 ♀, 2.xii.1950, Nellingen (K. L. H. Key).

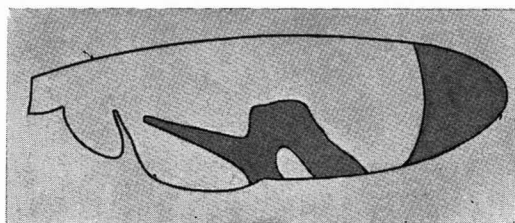


FIG. 1. Pattern of wing of *Laphria ornatipennis* Macq. (Shaded portion is brown, unshaded portion is yellow.)

***Laphria fulvipes* Ricardo, ♀**

Laphria fulvipes Ricardo, 1913. Ann. and Mag. Nat. Hist. (8) 11: 158.

Laphria fulvipes Hardy, 1929. Linn. Soc. N. S. Wales, Proc. 54: 359.

Laphria fulvipes Hardy, 1934. Ann. and Mag. Nat. Hist. (10) 13: 522.

Type in the British Museum, London.

Only the female is described. This species is unknown to the author.



FIG. 2. a, Scutellum of *Laphria clavata* White. b, Scutellum of *Laphria zentae* sp. nov.

***Laphria bancrofti* Ricardo, ♂, ♀**

Laphria bancrofti Ricardo, 1913. Ann. and Mag. Nat. Hist. (8) 11: 158.

Laphria bancrofti Hardy, 1929. Linn. Soc. N. S. Wales, Proc. 54: 359.

Laphria bancrofti Hardy, 1934. Ann. and Mag. Nat. Hist. (10) 13: 522.

Type (female) in the British Museum.

The considerable difference in the size of the sexes (♀—11 mm., ♂—17 mm.), the absence of spots on the sides of the male abdomen, and the difference in the colour of the femora show that the male probably does not belong to the same species as the female.

The author has seen only 2 specimens: 1 ♀, Palm Island, Queensland (Bancroft) and 1 ♀, 25.i.1949, Goodna, Queensland (I. F. B. Common), but he is not quite sure that the identification of the species is correct, both specimens have pure white, rather than yellow, markings on the mesonotum.

***Laphria hirta* Ricardo, ♂, ♀**

Laphria hirta Ricardo, 1913. Ann. and Mag. Nat. Hist. (8) 11: 159.

Laphria hirta Hardy, 1929. Linn. Soc. N. S. Wales, Proc. 54: 359.

Laphria hirta Hardy, 1934. Ann. and Mag. Nat. Hist. (10) 13: 522.

Type (male) in the British Museum.

The author has seen only one male specimen—1 ♂, 30.x.1950, Heathcote, New South Wales (T. R. Henry). This species is easily recognisable by the yellow spots laterally on each tergite, except the basal one. Hairs of face orange; on the frons and upper part of occiput black, on the lower part of occiput pure white. Moustache consists of about 12 long, fine, black bristles. Proboscis long, as long as the head is high, compressed laterally. All femora extremely swollen; all tibiae with extremely dense and long hairs, each of which is about three times as long as the diameter of the corresponding tibia. Hypopygium large, black, shining, rounded, as long as the last tergite. Sides of tergites with long, dense,

orange hairs, directed downwards.

Female (hitherto unrecorded). 1 ♀, 14.xi.1926, Woodford, New South Wales (Mackerras) is very similar to the male, but the hairs on the face are predominantly white, only slightly yellow at the sides, and all the femora swollen, though not to the same extent as in male.

***Laphria telecles* Walker, ♂, ♀**

Laphria telecles Walker, 1849. List Dipt. Brit. Mus. 2: 376.

Laphria telecles Walker, 1855. List Dipt. Brit. Mus. 7, Sup. 3: 559.

Laphria telecles Ricardo, 1913. Ann. and Mag. Nat. Hist. (8) 11: 154.

Laphria telecles White, 1916. Roy. Soc. Tasmania, Proc. 1916: 165.

Laphria telecles Hardy, 1929. Linn. Soc. N. S. Wales, Proc. 54: 358.

Types in the British Museum; from Western Australia.

The author has seen specimens from the following localities: 1 ♂, 5.xii.1936, Pemberton, Western Australia (K. R. Norris); 1 ♂, 25.xi.1914, Urella, New South Wales; 1 ♀, 13.ii.1948, Bendora, near Canberra, Australian Capital Territory (Paramonov); 1 ♀, 6.ii.1923, Strahan, Tasmania (A. Tonnoir); 1 ♀, 30.i.1948, 13 mls. N. W. of Broadmarsh, Tasmania (Key, Carne and Kerr).

***Laphria variana* White, ♂, ♀**

Laphria variana White, 1917. Roy. Soc. Tasmania, Proc. 1917: 72.

Laphria variana Hardy, 1929. Linn. Soc. N. S. Wales, Proc. 54: 358.

Laphria variana Hardy, 1934. Ann. and Mag. Nat. Hist. (10) 13: 520.

Type (male) in the British Museum.

The remark of G. H. Hardy, "... the allo-type female and a paratype are in Mr. J. Mann's collection," is based on a misunderstanding of the term "paratype." White described a "holotype" (single specimen) and it is quite evident that no paratypes existed. It

is also a very questionable practice to call a specimen of the second sex "allotype," without publishing an appropriate description.

The author has examined 1 ♂, 1924, Eidsvold, Queensland (Bancroft), and females from the following localities in Queensland: 2 ♀ ♀, Eidsvold; 1 ♀, 4.iv.1924, 1 ♀, ii.1923, Eidsvold; 1 ♀, 7.xi.1926, Lake Barrine (Goldfinch); 1 ♀, 1916, Tambourine; 1 ♀, x.-iv.1930, Eidsvold (T. L. Bancroft).

The female (hitherto unrecorded) is very similar to the male, but the central stripe of the abdomen is really black (in the male very often the black hairs only camouflage the yellow-red colour of the abdomen).

Both sexes of this species have anterior femora of a very peculiar colour pattern: on the underside and on the sides they are yellow, excepting for a small black apical area, but the upperside is black (Fig. 6a); in other species the dividing line of the areas of black and yellow colour is transverse to the long axis of the femur.

Laphria comata White, ♂, ♀

Laphria comata White, 1917. Roy. Soc. Tasmania, Proc. 1917: 85.

Laphria comata Hardy, 1929. Linn. Soc. N. S. Wales, Proc. 54: 358.

Laphria comata Hardy, 1934. Ann. and Mag. Nat. Hist. (10) 13: 521.

Type (male) in the British Museum.

The female was unknown up to the present; the note of G. H. Hardy, "the allotype female is in my own collection" cannot be accepted because this author has not published the description of the female.

The female is very similar to the male, but all femora are less strongly incrassate. From the females of other species it differs in having a very acute ovipositor, which, together with some of the apical abdominal segments, is strongly compressed laterally (Fig. 3a). This refutes the opinion of G. H. Hardy, 1934, that this form is only colour variety of *L. rufifemorata* Macq.

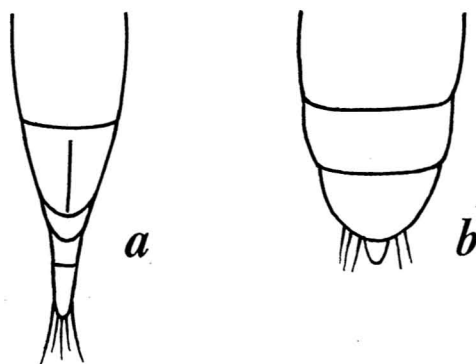


FIG. 3. a, Apical part of *Laphria comata* White, female. b, Apical part of *Laphria rufifemorata* Macq., female.

The author has examined the following specimens: Australian Capital Territory: 2 ♂ ♂, 17.ii.1953, Bendora, near Canberra (S. J. Paramonov); 7 ♀ ♀, 6.ii.1952, Lee's Springs, near Canberra (S. J. Paramonov); 1 ♀, 13.ii.1952, Mt. Gingera (S. J. Paramonov); 1 ♀, 15.iii.1948, 1 ♀, 31.iii.1948, Blundell's, near Canberra (S. J. Paramonov); 1 ♀, iii.1951, Westridge, Canberra (R. Richmond); 1 ♀, 15.iv.1953, Bendora (S. J. Paramonov); 1 ♀, 21.i.1931, Coree Creek, near Canberra (L. F. Graham). New South Wales: 1 ♂, 16.iv.1949, Chatswood (A. Dyce); 1 ♂, 11.i.1956, 7 ♀ ♀, 7.i.1956, Tubrabucca Ck., Barrington Tops, 4200 ft. (I. F. B. Common); 1 ♀, 9.iv.1949, Barrington Tops (S. J. Paramonov); 1 ♀, 28.ii.1936, Mt. Victoria (M. F. Day); 1 ♀, 25.xi.1914, Urella.

Laphria flavifemorata Macquart, ♀

Laphria flavifemorata Macquart, 1849. Dipt. Exot., Sup. 4: 73.

Laphria flavifemorata Ricardo, 1913. Ann. and Mag. Nat. Hist. (8) 11: 157.

Laphria flavifemorata Hardy, 1929. Linn. Soc. N. S. Wales, Proc. 54: 358.

Laphria flavifemorata Hardy, 1934. Ann. and Mag. Nat. Hist. (10) 13: 521.

Type in the Paris Museum; from Tasmania.

This species is unknown to the author. There are no grounds for the remark of G.

H. Hardy, 1934, that "the type-locality of this species was probably Sydney, not Tasmania as recorded." G. H. Hardy, in various papers, expressed doubts about the validity of Macquart's recording many species as from Tasmania, as he had not found them there himself. However, in most cases I have examined, Macquart's data were quite correct.

In his paper G. H. Hardy (1929) also writes: "The leg coloration is variable, having a complete range as is found in the three forms mentioned above (*L. rufifemorata* Macq., *L. telecles* Walk., *L. comata* White), but is to be distinguished from them by the slender femora which conform to those species placed in group I (*L. tectamus* Walk., *L. clavatus* White, *L. ornatipennis* Macq.)."

G. H. Hardy, 1929, did not give the description of the male, nor the date and locality of collection of the specimens examined, and his expression, "the leg coloration is variable, having a complete range" is very obscure. It is probable that he was dealing with a mixture of species as he had also done with *Comptosia*, *Oncodes*, and other genera, when at least half a dozen species were confused together.

This species can be recognised easily by its yellow femora, concolorous abdomen devoid of lateral white spots, nonincrassate femora, and its venation.

***Laphria rufifemorata* Macquart, ♂, ♀**

Laphria rufifemorata Macquart, 1844. Dipt. Exot., Sup. 1: 73.

Laphria rufifemorata Walker, 1855. List Dipt. Brit. Mus., Sup. 3: 559.

Laphria rufifemorata Ricardo, 1913. Ann. and Mag. Nat. Hist. (8) 11: 154.

Laphria rufifemorata White, 1916. Roy. Soc. Tasmania, Proc. 1916: 166.

Laphria rufifemorata Hardy, 1929. Linn. Soc. N. S. Wales, Proc. 54: 257.

Laphria rufifemorata Hardy, 1934. Ann. and Mag. Nat. Hist. (10) 13: 520.

One of the commonest species in Australia,

possibly distributed throughout the whole continent (Figs. 3*b*, 6*b*).

Type in the Paris Museum.

The author has examined specimens from the following localities: Australian Capital Territory: 3 ♂♂, 1 ♀, 15.iv.1953, Bendora (S. J. Paramonov); 1 ♂, 1 ♀, 28.iii.1951, Mt. Gingera (Common & Day); 1 ♂, 4 ♀♀, 6.iii.1952, Mt. Gingera (S. J. Paramonov); 1 ♂, 6.iii.1952, Mt. Gingera (H. M. Cane); 1 ♂, 23.i.1952, Lee's Springs (I. F. B. Common); 1 ♀, 15.iii.1950, Lee's Springs (S. J. Paramonov); 1 ♀, 14.i.1950, 1 ♀, 31.i.1952, Mt. Gingera (S. J. Paramonov); 1 ♀, 14.ii.1953, Mt. Gingera (I. F. B. Common); 2 ♀♀, 2.iii.1949, 1 ♀, 31.i.1952, Bendora (S. J. Paramonov); 1 ♀, iii.1948, Brindabella; 1 ♀, 10.iv.1951, Brindabella (Small). New South Wales: 1 ♂, 12.xi.1953, Durras (S. J. Paramonov); 2 ♂♂, 8.i.1956, Upper Manning Riv., Barrington Tops, 4500 ft. (I. F. B. Common); 1 ♀, vii.1949, Kincumber; 1 ♀, 14.x.1952, 4 mls. N. of Bateman's Bay (S. J. Paramonov); 1 ♀, 12.xii.1951, 40 mls. N. of Sydney (E. F. Riek); 1 ♀, 22.xi.1925, Gordon (Harrison); 1 ♀, Acacia Plat. (J. Armstrong) Victoria: 1 ♀, 23.ii.1951, Mitta Mitta (B. Given). Tasmania: 2 ♂♂, 25.xii.1922, 1 ♀, 31.xii.1922, Advent Bay (A. Tonnoir); 2 ♀♀, 30.i.1949, Erriba (E. F. Riek); 1 ♀, 10.i.1932, Mt. Wellington, Ferntree (L. F. Graham); 1 ♀, 26.i.1948, near Wadamana (Key, Carne, and Kerr); 1 ♀, 11.ii.1949, Rose's Tier (R. A. Free).

***Laphria calopogon* Bigot, ♂**

Laphria calopogon Bigot, 1876 (1878). Soc. Ent. de France, Ann. (5): 226.

Laphria calopogon Ricardo, 1913. Ann. and Mag. Nat. Hist. (8) 11: 157.

Laphria calopogon Hardy, 1929. Linn. Soc. N. S. Wales, Proc. 54: 358.

Laphria calopogon Hardy, 1934. Ann. and Mag. Nat. Hist. (10) 13: 521.

Type presumably in the British Museum, London.

Since Bigot's time this species has not been recognised. Length of body 11 mm. Locality: "Australia." Type probably in Bigot's collection.

From the Latin and French descriptions we can extract the following characters: Black, sparsely greyish haired, some long hairs on the underside of abdomen and on the femora and tibiae; sides of face with golden hairs; beard white. Wings broadly black, almost hyaline at base. Halteres pale. Femora and tibiae at base narrowly yellow (or only the posterior tibiae have the yellow basal spots). Apical part of tibiae and underside of tarsi with golden-reddish pubescence. Pulvilli yellow. Margin of 2nd-4th tergite yellow.

Without examination of the type it is difficult to identify this species; close relationship to *L. variana* White is evident.

Laphria niveifacies Macquart

Laphria niveifacies Macquart, 1849. Dipt. Exot., Sup. 4: 73.

Laphria niveifacies Ricardo, 1913. Ann. and Mag. Nat. Hist. (8) 11: 156.

Laphria niveifacies White, 1916. Roy. Soc. Tasmania, Proc. 1916: 167.

Laphria niveifacies Hardy, 1917. Roy. Soc. Tasmania, Proc. 1917: 66.

Laphria niveifacies Hardy, 1929. Linn. Soc. N. S. Wales, Proc. 54: 358.

Laphria niveifacies Hardy, 1934. Ann. and Mag. Nat. Hist. (10) 13: 521.

The type is apparently lost, as it could not be found in the Paris Museum.

Macquart's specimen was stated to be from Tasmania, but the species has not since been found there. Hardy, 1934, doubted the correctness of the locality record and supposed that the specimen came from Sydney, but my own experience has shown that Macquart's data about Tasmanian species were correct; Hardy's failure to find some species in Tasmania is not evidence that they are absent from Tasmania.

This species seems to be very closely related to *L. mauroides* sp. nov.

Laphria leei sp. nov., ♀

Belongs to the group of species with wholly black legs and wings, closely related to *L. maura* sp. nov.

Body black with a slightly bluish sheen, the usual greyish dust on head and underside of thorax almost completely lacking. Below bases of antennae, two-thirds up the height of the face there is a very distinct cross furrow, sharply separating the upper third (Fig. 4a). Sides of face with a narrow stripe of whitish hairs, bristles on the disc of the face (moustache) are long, black, but not very numerous.

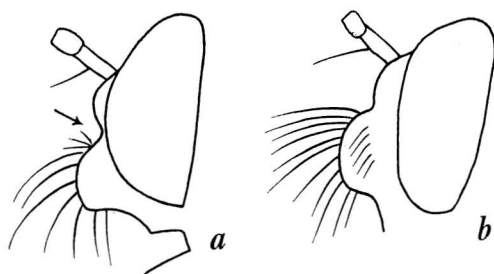


FIG. 4. a, Head of *Laphria leei* sp. nov. b, Head of *Laphria maura* sp. nov.

Proboscis long, black, shining, compressed laterally, slightly longer than height of head. Hairs on occiput whitish, except for some black ones above, which, however, are comparatively short and not as numerous as in other species.

Mesonotum dull, without grey markings, scutellum shining, with a row of sparse, comparatively weak, shortish marginal bristles. Disc of mesonotum without bristles. Pleurae dull, with some short whitish hairs. On the tubercle in front of halteres is a bunch of numerous, long, black bristles. Halteres yellow. Wings black, only alula and a part of axillar cell are nearly transparent. Fourth posterior cell with the closing vein, slightly convex and forming a very acute angle with m_2 . Legs black, shining, with bluish or violet reflection. Pulvilli yellowish. Hairs very short, mostly whitish; bristles comparatively weak, short and not as numerous as in other species.

Hind femora swollen in apical half, but not long.

Abdomen comparatively short, shining, nearly bare; at sides of 2nd–4th tergites weakly developed whitish spots. Genital (last) segment very short. Lateral bristles only on 1st and 2nd tergites, but very weakly developed.

Length of body 16 mm., of wing 12 mm.

1 ♀, 17.i.1951, Wyndham, Kimberley Research Station, Western Australia (L. C. Lee).

Type in the Division of Entomology Museum, C.S.I.R.O., Canberra.

Laphria maura sp. nov., ♂, ♀

Belongs to the group of species with completely black legs and black wings, superficially similar to *L. leei*, but distinguishable easily by the absence of the cross furrow on the face below the antennae (Fig. 4b); by the shorter proboscis, which is shorter than the height of the head; by the presence of silvery spots on the mesonotum and other characters.

Ground colour of body black, shining. Face and occiput white dusted. Face at sides broadly covered by faintly yellowish hairs. Moustache consists of numerous, strong, black bristles. Hairs on underside of head slightly yellowish. Proboscis short, depressed from above. Frons whitish dusted, with light coloured short hairs and two very long black bristles on the ocellar tubercle. Antennae black, the third joint rather long, clavate.

Mesonotum with silvery or golden spots beside humeral calli and another pair of them slightly behind the calli; postalar calli usually golden or yellow dusted. Upper part of mesopleurae with a spot of silvery dust. Pleurae mostly without dust, with black hairs and a tuft of black bristles in front of the halteres which have a yellow knob. Wings rather uniformly black, comparatively broad and short. First posterior cell closed with a slightly concave vein far from the margin of wing.

Legs black, black haired and bristled, but the tibiae have an admixture of whitish hairs. Pulvilli yellow. Hind tibiae short, swollen.

Abdomen black, shining, with lateral whitish spots on tergites 2–4, nearly bare; only on the terminal segments are there more black hairs. Hypopygium of male swollen, but not very large; in female the last segment is short. On tergites 1–6 there are black bristles laterally.

Length of body 11–15 mm., of wing 9–11 mm. Queensland: 1 ♂, xii.1922, Eidsvold (type) and a female; 1 ♂, 19.i.1949, Yeppon (I. F. B. Common); 2 ♂♂, 1 ♀, 2.–3.iv.1929, Burnside (T. G. Campbell). The last 3 specimens with a closed first posterior cell.

Type in the Division of Entomology Museum, C.S.I.R.O., Canberra.

Laphria reginae sp. nov., ♂, ♀

Belongs to the group of species with black legs; easily distinguishable by the presence of yellow spots on the abdomen.

Ground colour of body black, slightly shining; legs (in old specimens) may be brown, but never bright yellow or reddish.

Face and underside of thorax with very dense grey dust. Bristles and hairs on the head black, except below, where they are whitish. Bristles and hairs on mesonotum black, but on underside of thorax in the area above the fore coxae the hairs are whitish, and the very long bristles on the tubercle in front of the halteres are reddish. Hairs on mesopleurae long and black. The hairs and bristles on mesonotum are very long and thin. On the anterior part of the mesonotum there are two lateral spots of golden dust (chiefly on the humeral calli and a little behind them). Wings slightly greyish. First posterior cell slightly narrowed at apex. Fourth posterior cell closed, much shorter than discal cell, its apical cross vein convex outwards, forming a very broad angle with m_3 . Halteres yellow. In two specimens the second submarginal cell is divided by a supernumerous vein. The possibility is not excluded that these specimens might belong to a distinct species. Legs with very long hairs and bristles, mostly black.

Abdomen with rather bright yellow hairs. The lateral bristles on the first tergite are yellow, the long, strong bristles on the penultimate segment are black. On the sides of the 2nd-6th tergites there are small yellow, almost golden spots. Last genital segment is very short, directed downwards.

Length of body 12 mm., of wing 9 mm.

1 ♂ (type) Tambourine, Queensland, 1916 (Froggatt?); genitalia large, swollen, black, shining; two long lateral forceps on underside, and two very long lateral brushes of black, strong bristles. 1 ♀, Tambourine, Qld. (Davidson?); 1 ♀, 3.xi.1911, Mt. Tambourine, Qld.; 1 ♀, 1917, Mt. Tambourine, Qld.; 1 ♀, 1916, Tambourine, Qld., 1 ♀, 1926, Bulga, New South Wales (Froggatt); (the last two specimens with 3 submarginal cells).

Type (male) in the Division of Entomology Museum, C.S.I.R.O., Canberra.

Laphria mauroides sp. nov., ♂, ♀

Belongs to the group of species with black legs and wings darkened along the veins, closely related to *L. dayi* sp. nov., but distinguishable by the presence, immediately over the scutellum, of short rather strong bristles, even on the declining part of mesonotum, by an irregular disposition of hairs on mesonotum (in *L. dayi* they are less numerous and distributed in longitudinal rows), and moustache tubercle not very sharply separated from the upper part of face.

Body black, shining. Head with greyish dust, very similar to that of *L. dayi* or *L. modesta*.

Mesonotum with similar markings as in *L. dayi*, but with short black hairs irregularly distributed. Wings dark, rather broad, the veins closing the discal and 4th posterior cells very close together and nearly parallel (Fig. 5a). Pleurae nearly entirely grey dusted, only the disc of the mesopleurae black, shining. Legs black, with hairs predominantly white. Femora moderately swollen. Halteres yellow.

Abdomen as in *L. dayi* sp. nov.

Length of body 15 mm., of wing 12.5 mm.

Australian Capital Territory: 1 ♂, 5.ii.1952, Lee's Springs (S. J. Paramonov), (type); 1 ♀, 2.ii.1954, Canberra (S. J. Paramonov); 1 ♀, 6.iv.1948, Blundell's (S. J. Paramonov). New South Wales: 1 ♀, 18.ii.1934, Killara (M. F. Day); 1 ♀, 10.ii.1955, near Queanbeyan (Z. Liepa). Victoria: 1 ♀, 10.ii.1954, Romsey (E. F. Riek).

Type (male) in the Division of Entomology Museum, C.S.I.R.O., Canberra.

Laphria lukinsi sp. nov., ♂, ♀

Belongs to the group of species with black legs. Distinguishable at once by the yellow apical part of the abdomen.

Head black, with yellowish dust, hairs and bristles. The hairs at sides of face are flat and scalelike. Proboscis long, slightly shorter than head height, strongly compressed laterally. Palpi very small, hairs light coloured.

Mesonotum black, dull, with some yellow markings beside humeral calli. Short hairs black, but the longer ones in the prescutellar area yellowish. Bristles black, but those on postalar calli and scutellum yellow, very thin. Disc of scutellum with yellow depressed hairs. Underside of thorax yellowish dusted, with yellowish hairs and bristles. Only one black bristle on mesopleurae. Halteres yellow.

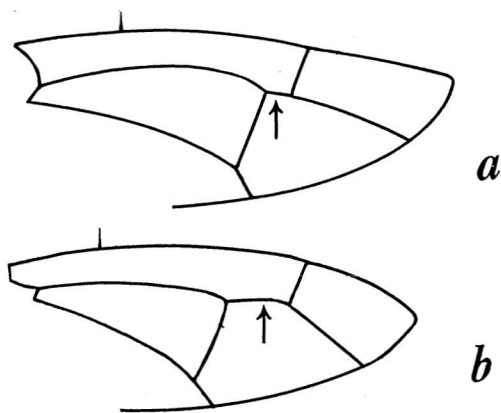


FIG. 5. a, Subdiscal cell of *Laphria mauroides* sp. nov. b, Subdiscal cell of *Laphria modesta* sp. nov.

Wings in apical two thirds strongly smoked but not black. First posterior cell at apex distinctly narrowed; 4th posterior cell closed close to hind margin of wing, only slightly shorter than discal cell. All veins black.

Legs black, pulvilli yellow, underside of fore tibiae so densely covered with short yellow hairs as to appear yellow. Hairs on tibiae extremely long, thin and yellow. All femora short and very swollen.

Abdomen narrow, cylindrical. First segment black, other segments becoming more reddish towards the apex. Lateral bristles yellow, weak. Discs of tergites with very short black hairs, along the hind margins there are numerous yellow hairs almost forming cross-bands. Hypopygium large, very swollen, reddish, with some separate bristles, but lacking tufts.

Length of body 14 mm., of wing 11 mm.

1 ♂, 5.xii.1953 (type), and 1 ♀, 11.xii.1953, Wyndham, Kimberley Research Station, Western Australia (R. Lukins).

Type (male) in the Division of Entomology Museum, C.S.I.R.O., Canberra.

Laphria modesta sp. nov., ♂, ♀

Belongs to the group of species with black legs and wings with saturated colour along the veins. Closely related to *L. mauroides* sp. nov., but easily distinguishable by its partly reddish scutellum and by the short subdiscal cell (Fig. 5b), which in *L. mauroides* is very slightly shorter than the discal cell.

Black, shining. Head with grey dust. Moustache tubercle sharply protuberant in profile (in *L. mauroides* not strongly separated from the upper part of face). Moustache consists of black bristles, hairs of face whitish. Proboscis short, depressed from above. Third antennal joint elliptical, elongated. Occiput with grey dust and whitish hairs, ocellar tubercle with 2 very strong, long, black bristles. There are some whitish spots on mesonotum beside the humeral calli, but they are poorly developed. Hairs on mesonotum predomi-

nantly whitish. Prescutellar area (declining part) with fine black and white hairs. Disc of scutellum and postalar calli reddish. Marginal bristles of scutellum very thin, hair-like, whitish; postnotum with strong white dust. Bunch of long hairs in front of halteres black. Halteres yellow. Wings rather strongly smoked, more so along the veins. First posterior cell distinctly narrowed at apex. Fourth posterior cell distinctly shorter than discal cell; the veins closing the discal and 4th posterior cell are not parallel; the lower angle of the latter is acute.

Legs black, mostly with white, shortish hairs; the fore tibiae lacking the usual extremely long bristles and hairs. Femora short, swollen. Tibiae dark brown.

Abdomen black, shining, with predominantly whitish short hairs laterally and white spots at sides of tergites 2–4. Hypopygium of moderate size. Lateral bristles mostly yellow; on apical segments they, as well as the hairs, are dark.

Length of body 9.5–13.5 mm., of wing 7–10 mm.

Females appear to be larger on the average than the males.

2 ♂♂, 3 ♀♀, 20.iv.1924, Eidsvold, Queensland (Bancroft), type male, labelled with a type label; 1 ♂, Jan.–Feb. 1923, Eidsvold, Queensland.

Type in the Division of Entomology Museum, C.S.I.R.O., Canberra.

Laphria dayi sp. nov., ♂, ♀

Belongs to the group with black legs, but with not absolutely black wings, easily distinguishable from *L. modesta* sp. nov. and *L. mauroides* sp. nov. by the presence of numerous, short bristles immediately above the scutellum, in the prescutellar area of the mesonotum.

Body black, shining. Head densely covered with a greyish dust, moustache area shining. Bristles of moustache very long, black, the lateral parts of the face covered with whitish

bristles and hairs. Moustache tubercle very well developed. Proboscis massive, short, acute, shining, black, depressed from above, not compressed laterally. On occiput about a dozen strong, black bristles.

Mesonotum shining, with some white spots on humeral calli, also beside them and at the sides of the mesonotum. Collare (pronotum) with a row of numerous black, short bristles. Pleurae also with whitish spots, but mesopleurae shining. Mesonotum bare, but there are three longitudinal rows of short, black hairs, and the prescutellar area is covered with numerous, long, erect hairs; area immediately above the scutellum with short black bristles. The tuft of long hairs in front of the halteres consists of black and whitish hairs. On margin of scutellum 8-10 long white hairs (reduced bristles). Wings dark, with colour saturated along the veins. First posterior cell rather broadly open. Fourth posterior cell very broad, slightly shorter than discal cell. Halteres yellow. Legs black, pulvilli brownish. Hairs on legs mostly whitish, the very long hairs usually present on tibiae are not very well developed in this species. All femora are very moderately swollen.

Postnotum strongly shining, almost silvery.

Abdomen strongly shining, nearly bare; on the sides of the tergites are some whitish hairs, and 1 black bristle laterally. On the sides of tergites 2-4 are whitish spots. Hypopygium of male not large, only slightly protruding.

Length of body 14.5-18 mm., of wing 10.5-15.5 mm.

New South Wales: 1 ♂, 14.ii.1928, National Park (Mackerras) (type), and 1 ♂, 1 ♀, same date and locality; 1 ♂, 20.ii. Gordon (D. F. Waterhouse); 1 ♂, 27.xii.1927, Dee-Why (M. Fuller); 1 ♂, 18.ii.1936, Killara (M. F. Day); 1 ♂, 3 ♀ ♀, 7.iv.1951, 17 mls. SSW of Bohena, Pilliga Scrub (Key & Chinnick). Western Australia: 1 ♂, 1 ♀, 30.xii.1953, 12 mls. W. of York (J. H. Calaby).

Type in the Division of Entomology Museum, C.S.I.R.O., Canberra.

Laphria campbelli sp. nov., ♂

Belongs to the group of species with black legs; closely related to *L. mauroides* sp. nov., but having a distinct, bright yellow base to the wing.

Head as in *L. mauroides* sp. nov., third antennal joint also very broad, elliptical.

Mesonotum as in *L. mauroides* sp. nov., a pair of whitish spots beside the humeral calli, another pair at suture laterally, and a 3rd pair at the postalar calli. Hairs distributed irregularly on the mesonotum. A brush of thick short hairs on the underside at the apex of the hind tibiae is more strongly developed than in *L. mauroides*. First posterior cell is narrower at apex than in *L. mauroides*; only one-third of the width of the 2nd one, whereas in *L. mauroides* it is equal to one-half. Wings are distinctly narrower than in *L. mauroides*.

Abdomen as in *L. mauroides*.

Length of body 11-13 mm., of wing 8.5-9.5 mm.

1 ♂ (type), 12.iii.1957, Exp. area 3 mls. E. Pilot Hill, Bago Forest, Batlow, New South Wales. Phasmid Ecol. Exp. (T. G. Campbell); 1 ♂, same data and locality.

Type in the Division of Entomology Museum, C.S.I.R.O., Canberra.

Laphria burnsi sp. nov., ♂, ♀

Closely related to *L. bancrofti* Ric., but easily distinguishable by the reddish yellow abdomen in the male, and the reddish central half of the abdomen in the female.

Head as in *L. bancrofti* Ric., but moustache consists of distinct black bristles, not hairs. Facets near face are much larger than on the outside of the eye. Face occupying about one-fifth of head width. Palpi yellowish haired. Occiput predominantly yellowish haired, only on the upper part are there some long, black hairs.

Mesonotum as in *L. bancrofti* Ric., but bristles black in both sexes. Wings strongly darkened in their apical two-thirds, in the basal third almost hyaline. Hind femora very

swollen, especially in male.

Abdomen in male reddish, only the basal segment and genitalia deep black, shining. Hairs on 2nd and 6th tergites reddish, on 3rd–5th tergites black; these hairs are rather long and numerous, but depressed. Hypopygium very massive, rounded, and complicated in structure, longer than the 6th tergite. In the female the abdomen is black, but the central half is reddish, and covered with black hairs which camouflage the ground colour of the abdomen; last two tergites wholly reddish. The base of genital is also reddish but the remainder is black; hairs yellow.

This species is also very closely related to *L. variana* White, but its black anterior and middle femora permit it to be separated easily from that species, as the fore and mid femora of *L. variana* White are widely yellow in the basal part. The colour of the wing is also different from that of *L. variana*; the larger apical part is strongly separated from the

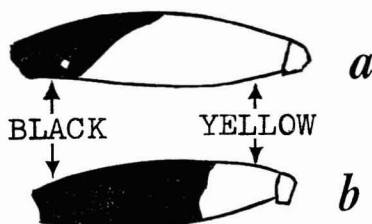


FIG. 6. *a*, Fore femora of *Laphria variana* White, female. *b*, Fore femora of *Laphria rufifemorata* Macq., female.

hyaline base, whereas in *L. variana* the entire wing is uniformly coloured with an intermediate intensity.

Length of body 13 mm., of wing 9 mm.

1 ♂ (type), 1 ♀, 11.xii.1949, probably in copula, Eubenangee, Nth. Queensland (A. Burns); 1 ♀, xi.1926, Meringa, Queensland (Goldfinch).

Type in the private collection of Mr. A. Burns, Melbourne.